

WHAT IS CLAIMED IS:

- 1 1. A transceiving unit for wireless communications over the industrial-  
2 scientific-medical (ISM) spectrum comprising: F.6  
3 (a) an RF sub-module for transceiving information in a 2.4 to 2.5 GHz  
4 band; and,  
5 (b) a DECT baseband processor coupled and adapted to provide time slot  
6 and frame timing to the RF sub-module such that at least seventy-five  
7 hopping frequencies between 2.4 GHz and 2.4835 GHz and a minimum hop  
8 rate of 2.5 hops per second are maintained.

- 1 2. The transceiving unit as recited in claim 1 wherein the baseband processor  
2 comprises first and second means for supporting concurrent voice and data  
3 communications.  
1 3. The transceiving unit as recited in claim 1 wherein each time slot comprises a  
2 32-bit preamble for synchronization, a 64 bit A-field for signaling and a B-  
3 field comprising 320 bits and 4 bits for CRC.  
1 4. The transceiving unit as recited in claim 1 wherein the baseband processor  
2 provides time slot and frame timing such that the at least seventy-five carrier  
3 frequencies are programmed ranging between 2401.122 MHz to 2479.813  
4 MHz and spaced 1.063 MHz apart.

- 1 5. The transceiving unit as recited in claim 4 wherein the baseband processor  
2 provides time slot and frame timing such that each of the at least seventy-five  
3 channels supports a ten-millisecond frame.

- 1 6. The transceiving unit as recited in claim 5 wherein the baseband processor  
2 provides time slot and frame timing such that each frame comprises sixteen  
3 time slots.

- 1 7. The transceiving unit as recited in claim 6 wherein the sixteen time slots  
2 preferably change carrier channels after two consecutive frames.
- 1 8. The transceiving unit as recited in claim 7 wherein unequal amounts of time  
2 slots are allocated between voice and data communications.
- 1 9. The transceiving unit as recited in claim 7 wherein time slots 1, 2, 3 and 9, 10,  
2 11 are allocated for data communication and time slots 4, 5, 6 and 12, 13, 14  
3 are allocated for voice communications. F8
- 1 10. The transceiving unit as recited in claim 9 wherein time slot 8 is allocated to  
2 program the transmit carrier frequency and slot 16 is allocated to program the  
3 receive carrier frequency.
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- 1 11. The transceiving unit as recited in claim 9 wherein time slots 1, 2, 3 and 9, 10,  
2 11 allocate 80 bits in the B field to a Forward Error Correction Code (FECC).
- 1 12. The transceiving unit as recited in claim 9 wherein time slots time slots 4, 5, 6  
2 and 12, 13, 14 allocate the entire B field to voice information.

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1 13. A wireless communications method over the industrial-scientific-medical  
2 (ISM) spectrum comprising the steps of:  
3 (a) transceiving information in a 2.4 to 2.5 GHz band; and,  
4 (b) adapting a DECT baseband processor to provide time slot and frame  
5 timing for step (a) such that at least seventy-five hopping frequencies  
6 between 2.4 GHz and 2.4835 GHz and a minimum hop rate of 2.5 hops per  
7 second are maintained.

1 14. The method as recited in claim 13 wherein step (a) further comprises the step  
2 of supporting concurrent voice and data information.

1 15. The method as recited in claim 14 wherein the voice and data information are  
2 packetized into plural time slots within a time frame and share equal  
3 amounts of the time frame.

1 16. The method as recited in claim 15 wherein each of the plural time slots has a  
2 different one of the plural frequency channels.

1 17. The method as recited in claim 16 wherein each of the plural time slots  
2 changes to a different one of the plural frequency channels after a  
3 predetermined number of consecutive frames.

1 18. The method as recited in claim 16 further comprising the step of providing  
2 time slot and frame timing such that seventy-five carrier frequencies are  
3 programmed ranging between 2401.122 MHz to 2479.813 MHz and spaced  
4 1.063 MHz apart.

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1 19. The method as recited in claim 18 further comprising the step of providing  
2 time slot and frame timing such that each of the seventy-five channels  
3 supports a ten-millisecond frame.

1 20. A system for wireless communications over the industrial-scientific-medical  
2 spectrum comprising:

3 (a) a base station unit having a first transceiving unit;

4 (b) a cordless personal access device having a second transceiving unit;

5 and,

6 (c) the first and second transceiving units including:

7 (i) an RF sub-module for transceiving information in a 2.4 to 2.5  
8 GHz band; and,

9 (ii) a DECT baseband processor coupled and adapted to provide

10 time slot and frame timing to the RF sub-module such that at least seventy-

11 five hopping frequencies between 2.4 GHz and 2.4835 GHz and a minimum

12 hop rate of 2.5 hops per second are maintained.

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